

WHAT IS CLAIMED IS:

1. A substrate body-floating apparatus for blowing an air flow onto a rear surface of a disk-shaped substrate body to float and rotate the substrate body comprising:

5 a floating unit wherein said floating unit comprises one or more fine pores for floating the substrate body, one or more fine pores for centering the substrate body at a center of a substrate body-floating apparatus, one or more fine pores for rotating the substrate body at a center of said apparatus, and one or more
10 auxiliary fine pores for suppressing vibration of the substrate body when the substrate body is rotated at a high speed.

2. The substrate body-floating apparatus according to claim 1 wherein all of said fine pores are provided on a surface of said floating unit and are inclined against the surface of said floating unit, wherein an air flow is injected into all of the
5 fine pores in a direction of the inclination.

3. The substrate body-floating apparatus according to claim 2 wherein said one or more fine pores for floating the substrate
82 body crosses a rotation axis of the substrate body, and a surface of said floating unit is divided into four areas by an angular

5 space of 90 degrees, said one or more said fine pores for floating are provided in one area that is parallel to a diagonal line of each area and oriented to a center of said floating unit.

4. The substrate body-floating apparatus according to claim 2 wherein said one or more fine pores for centering are located at positions on an outer periphery of the substrate body, or on an outer side from the outer periphery at an angular space, and said one or more fine pores for centering are oriented to a center of said floating unit.

5 6. The substrate body-floating apparatus according to claim 2 wherein said one or more fine pores of rotating are located at positions away from a tangential line to a circle with a radius smaller than the radius of the substrate body around a center of a surface of said floating unit, and said one or more fine pores for rotating are oriented in an opposite tangential direction.

6. The substrate body-floating apparatus according to claim 2 where said one or more auxiliary fine pores are oriented to a center of said floating unit and located on a periphery of a circle from the position of said one or more fine pores for rotating from a center of said floating unit at an angular space

of 90 degrees therebetween.

7. A substrate body-floating type of heater comprising:

a floating unit wherein said floating unit comprises one or more fine pores for floating the substrate body, one or more fine pores for centering the substrate body at a center of a substrate body-floating apparatus, one or more fine pores for rotating the substrate body at a center of said apparatus, and one or more auxiliary fine pores for suppressing vibration of the substrate body when the substrate body is rotated at a high speed wherein an air flow is blown to a rear surface of the substrate body to float and rotate the substrate body and a surface of the substrate body is heated by an optical heater.

8. A substrate body-floating type of film-forming apparatus comprising:

a floating unit wherein said floating unit comprises one or more fine pores for floating the substrate body, one or more fine pores for centering the substrate body at a center of a substrate body-floating apparatus, one or more fine pores for rotating the substrate body at a center of said apparatus, and one or more auxiliary fine pores for suppressing vibration of the substrate

body when the substrate body is rotated at a high speed wherein

10 *SW* *BY* an air flow is blown onto a rear surface of the substrate body to float and rotate the substrate body under atmospheric pressure or under depressurized conditions for forming a film of deposited material on a surface of the substrate body.

SW *BY* 9. The substrate body-floating type of film-forming apparatus according to claim 8 where an internal diameter of a nozzle for blowing gas for film formation onto a surface of the substrate body and an external diameter of the substrate body are
5 set to substantially the same values and a clearance between a tip of the nozzle for blowing the gas and a surface of the substrate body is set to 2 mm or less.